

Amendment to the Claims:

Please amend the claims as follows:

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Claim 1 to 92 (canceled)

Claim 93 (currently amended): An isolated or recombinant ~~[[A purified]]~~ polypeptide having at least about 50% sequence identity ~~[[homology]]~~ to a polypeptide having a sequence as set forth in SEQ ID NO:4 ~~as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters~~ and having α -galactosidase activity.

Claim 94 (currently amended): The isolated or recombinant ~~[[purified]]~~ polypeptide of claim 93, wherein the ~~[[having about 50%]]~~ sequence identity is ~~homology to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.~~

Claim 95 (currently amended): The isolated or recombinant ~~[[purified]]~~ polypeptide of claim 93 having at least about 55% sequence identity ~~[[homology]]~~ to a polypeptide having a sequence as set forth in SEQ ID NO:4 ~~as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.~~

Claim 96 (currently amended): The isolated or recombinant ~~[[purified]]~~ polypeptide of claim 95 ~~[[93]]~~ having at least about 60% sequence identity ~~[[homology]]~~ to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.

Claim 97 (currently amended): The isolated or recombinant [[purified]] polypeptide of claim 96 [[93]] having at least about 65% sequence identity [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.

Claim 98 (currently amended): The isolated or recombinant [[purified]] polypeptide of claim 97 [[93]] having at least about 70% sequence identity [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.

Claim 99 (currently amended): The isolated or recombinant [[purified]] polypeptide of claim 98 [[93]] having at least about 75% sequence identity [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.

Claim 100 (currently amended): The isolated or recombinant [[purified]] polypeptide of claim 99 [[93]] having at least about 80% sequence identity [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.

Claim 101 (currently amended): The isolated or recombinant [[purified]] polypeptide of claim 100 [[93]] having at least about 85% sequence identity [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.

Claim 102 (currently amended): The isolated or recombinant [[purified]] polypeptide of claim 101 [[93]] having at least about 90% sequence identity [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.

Claim 103 (currently amended): The isolated or recombinant [[purified]] polypeptide of claim 102 [[93]] having at least about 95% sequence identity [[homology]] to a polypeptide having a sequence as set forth in SEQ ID NO:4 as determined by analysis with a sequence comparison algorithm or FASTA version 3.0t78 with the default parameters and having α -galactosidase activity.

Claim 104 (currently amended): An isolated or recombinant [[A purified]] polypeptide having a sequence as set forth in SEQ ID NO:4.

Claim 105 (currently amended): An isolated or recombinant [[A purified]] polypeptide comprising at least 10 consecutive amino acids of the polypeptide of [[any one of claims]] claim 93 [[, 94, and]] or claim 104 and having α -galactosidase activity.

Claim 106 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 105 comprising at least 15 consecutive amino acids of the polypeptide ~~of any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 107 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 106 comprising at least 20 consecutive amino acids of the polypeptide ~~of any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 108 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 107 comprising at least 25 consecutive amino acids of the polypeptide of ~~any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 109 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 108 comprising at least 30 consecutive amino acids of the polypeptide of ~~any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 110 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 109 comprising at least 35 consecutive amino acids of the polypeptide of ~~any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 111 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 110 comprising at least 40 consecutive amino acids of the polypeptide of ~~any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 112 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 111 comprising at least 50 consecutive amino acids of the polypeptide of ~~any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 113 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 112 comprising at least 55 consecutive amino acids of the polypeptide of ~~any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 114 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 113 comprising at least 100 consecutive amino acids of the polypeptide of ~~any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 115 (currently amended): The isolated or recombinant [[A purified]] polypeptide of claim 114 comprising at least 150 consecutive amino acids of the polypeptide of ~~any one of claims 93, 94, and 104 and having α -galactosidase activity.~~

Claim 116 (currently amended): An isolated or recombinant [[A purified]] polypeptide encoded by a sequence ~~as set forth in SEQ ID NO:3, or variants thereof,~~ having at least about 50% sequence identity to SEQ ID NO:3, wherein the polypeptide has α -galactosidase activity ~~and is able to renature and regain activity after exposure to temperatures of about 60 degrees C to about 105 degrees C.~~

Claim 117 (currently amended): An isolated or recombinant [[A purified]] polypeptide encoded by a sequence ~~as set forth in SEQ ID NO:3, or variants thereof,~~ having at least about 50% sequence identity to SEQ ID NO:3, wherein the polypeptide catalyzes the enzymatic hydrolysis of saccharides.

Claim 118 (currently amended): An enzyme preparation comprising the polypeptide of claim 93 or claim 105 [[94 which is]] and a liquid.

Claim 119 (currently amended): A dry [[An]] enzyme preparation comprising the polypeptide of claim 93 or claim 105 [[94 which is dry]].

Claim 120 (new): The isolated or recombinant polypeptide of claim 116, wherein the α -galactosidase activity comprises the ability to renature and regain activity after exposure to temperatures of about 60°C to about 105°C.

Claim 121 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 55% sequence identity to SEQ ID NO:3.

Claim 122 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 60% sequence identity to SEQ ID NO:3.

Claim 123 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 65% sequence identity to SEQ ID NO:3.

Claim 124 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 70% sequence identity to SEQ ID NO:3.

Claim 125 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 75% sequence identity to SEQ ID NO:3.

Claim 126 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 80% sequence identity to SEQ ID NO:3.

Claim 127 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 85% sequence identity to SEQ ID NO:3.

Claim 128 (new): The isolated or recombinant of claim 116, wherein the polypeptide is encoded by a sequence having at least about 95% sequence identity to SEQ ID NO:3.

Claim 129 (new): An isolated or recombinant polypeptide having a sequence as set forth in SEQ ID NO:4 comprising at least one conservative amino acid substitution, wherein

the conservative amino acid substitution comprises substituting one hydrophobic amino acid for another or substituting one polar amino acid for another.

Claim 130 (new): The isolated or recombinant of claim 129, wherein arginine is substituted for lysine or glutamic acid is substituted for aspartic acid or glutamine is substituted for asparagine.

Claim 131 (new): The isolated or recombinant of claim 93 or claim 105, wherein the polypeptide is associated with a polyethylene glycol.

Claim 132 (new): An isolated or recombinant polypeptide comprising an active fragment of the polypeptide of claim 93 or claim 104.

Claim 133 (new): A method of making a polypeptide having α -galactosidase activity comprising the following steps:

- (a) providing an α -galactosidase-encoding nucleic acid, wherein the nucleic acid encodes an α -galactosidase having a sequence as set forth in claim 93; and,
- (b) expressing the nucleic acid, thereby generating a polypeptide having α -galactosidase activity.

Claim 134 (new): The method of claim 133, wherein the nucleic acid is inserted into a host cell and the polypeptide having α -galactosidase activity is expressed in the cell.

Claim 135 (new): The method of claim 134, wherein the cell is a prokaryotic cell or a eukaryotic cell.

Claim 136 (new): The method of claim 133, wherein the nucleic acid is operatively linked to a promoter.

Applicant : Murphy, et al.
Serial No. : 09/886,400
Filed : June 20, 2001
Page : 10 of 20

Attorney's Docket No.: 09010-004005

Claim 137 (new): The method of claim 136, wherein the nucleic acid further comprises a vector.